NAPLES TYPHUS EPIDEMIC, 1942–3

[AS SEEN BY AN ENTOMOLOGIST]

BY

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Busvine (1945), reviewing recent work on the louse, *Pediculus humanus* var. *corporis* de Geer, stated that the standard method of delousing consisted of dusting fully clothed individuals with D.D.T., using hand- or power-operated dust-guns. Chalke (1945), confirming this statement, explained that the method of mechanical dusting was evolved by the Rockefeller Foundation louse research team, put into practice for the first time in Naples, and that it was the method of delousing which was the secret of success because large numbers of people could be rapidly treated without being undressed. Chalke remarked, too, that the epidemic was not controlled entirely by the use of D.D.T.

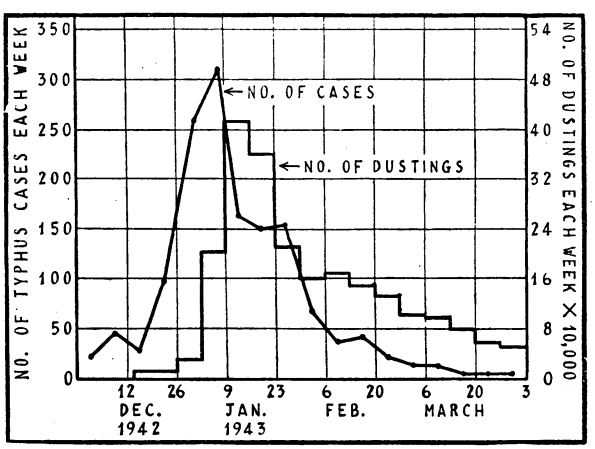
It is perhaps the correct moment, as more and more is published concerning this epidemic, to bring forward the evidence upon which the above statements were made. I was in Naples as an official military observer of the louse control methods used, and am indebted to those who gave me every facility to study the problem, and more particularly to Lieut.-Col. Chalke, R.A.M.C., the senior British hygiene officer in Naples, Brig.-Gen. Fox and Col. Bishop of the U.S. Typhus Commission, and Dr. Soper of the Rockefeller Foundation.

Brief History of Epidemic

Cases of typhus occurred sporadically until the beginning of December, 1942, when it became apparent that an epidemic was likely. The Rockefeller Foundation Research team arrived on Dec. 15, and immediately organized the case-finding teams, each with a medical officer, and case-contact delousing teams. The term delousing used here refers to the application of louse powder by dust-guns to the fully clothed individual; steam and hot-air disinfestation were not used except at hospitals receiving typhus cases. The case-contact delousing was the delousing of the typhus patient, members of the household, and inhabitants of the surrounding houses and flats—i.e., "block" dusting to stop the spread of the disease from the known cases. Throughout the epidemic such dustings averaged approximately 2,000 a day.

On Dec. 27 the dusting of the inhabitants of air-raid shelters started, and eventually covered 311 shelters on a rota system. On Dec. 28 the first public delousing centre was opened, and by Jan. 6 twelve were in operation; eventually twenty-nine stations were opened. The U.S. Typhus Commission arrived in Naples on Dec. 28, with a consequent immediate expansion of all services, and inoculation was begun as a preventive measure.

The course of the epidemic is shown in the Graph, where the weekly typhus rate is plotted together with the weekly total of



dustings. The typhus rate rose sharply in the third week of December in typical epidemic fashion, though the rise was to some extent augmented by the case-finding teams discovering unreported cases. The peak was reached in the week ending Jan. 9, the highest number of cases recorded in one day being 63 on Jan. 8. The typhus rate then fell to a level of 150 cases a week and remained constant for three weeks, indicating that the epidemic had been successfully checked. Towards the end of January a new rise in the typhus rate was expected in accordance with the usual periodicity seen in the early stage of an epidemic; actually the rate remained low and in early February started a steady decline. It is extremely unlikely that it was self-limiting, because the conditions within the city, and of the civil population, were bad and conducive to an epidemic; it is surprising that no other epidemic occurred.

Evaluation of Louse-control Measures

Before attempting to evaluate the methods used it is essential to realize that the outstanding feature was the mechanical application of louse powders to fully clothed individuals. While the method does not ensure complete disinfestation in one treatment, as is obtained with steam or hot air, it does permit of the general reduction of lousiness of a large community in a short space of time, and on a scale that is impossible with any other method. This point is sometimes overlooked. It has revolutionized our ideas on the control, as well as the prevention, of lousiness. In Naples a total of 2,759,000 dust treatments were given up to the beginning of April, 420,962 in the heaviest week ending Jan. 15, and 69,426 in the heaviest day, Jan. 12. (These figures refer to the city only and exclude treatments given in the surrounding towns and villages.)

There were two distinct phases in the breaking of the epidemic. First, the outbreak had been checked and partially controlled by Jan. 9, and, secondly, was completely controlled by Feb. 6. Louse powders were used to destroy the vector, but because of the incubation period of the disease (approximately twelve days) and the delay in finding cases (usually five days after the onset of symptoms), the effect of delousing could not be reflected in the daily typhus rate until sixteen to eighteen days after application of the powders. Therefore to determine the significance of these dates it is necessary to consider what occurred before Dec. 23 and Jan. 21, respectively.

From Dec. 15 to Jan. 1, 52,000 dustings were done, 32,000 being case-contact treatments. In this period the Rockefeller Foundation were working alone until the Typhus Commission arrived on Dec. 28, so that no other large-scale measures could be adopted. Further, in this period over 90% of the louse powder used was MYL, the American powder containing pyrethrum (Davis and Wheeler, 1944); the remaining 10% was D.D.T., but this did not become available till near the end of the month. Thus the epidemic was checked and partly controlled by the closely associated case-finding and case-contact delousing services ("blocking" of the typhus case) using MYL louse powder. From Jan. 1 10% D.D.T. in talc was used exclusively by all civilian services. It is impossible to say which method contributed most to the successful outcome, but credit can be given to the efficiency of the D.D.T. powder.

The armies in Naples were in a special position relative to the civilian population, being highly organized, almost independent of the civil administration, and therefore in a position to rely upon preventive measures. The measures adopted by the British Army depended upon three principles. First, the avoidance of contact with the source of infection by placing cinemas, restaurants, etc., out of bounds to troops; second, protection of the individual soldier by inoculation and the weekly use of the original A.L.63, containing derris and naphthalene (Craufurd-Benson and McLeod, 1946); and, third, close supervision of the hygiene of the troops, supported by propaganda. It is impossible to say which of these principles was the most important, but the astonishingly low incidence of pediculosis in the area during January and February is evidence of their effectiveness. There were two cases of typhus, and both men had been in close contact with civilians and were found to be lousy.

An interesting sidelight on the efficiency of A.L.63 was provided by the treatment of civilians employed by, and in close touch with, the Army. The 20,000 regular employees were treated every fortnight with A.L.63 by special Army dusting teams, and no case of typhus occurred amongst them. There were a number of cases among the 25,000 labourers who could not be treated regularly.

Summary

An analysis of the Naples epidemic from an entomological point of view shows that the outstanding feature was the mechanical application of louse powders as a means of delousing fully clothed individuals, and reducing the general level of lousiness in a population. This made it possible to disinfest large numbers of people quickly and on a scale previously considered impossible.

Furthermore, the correct application on a large scale of any satisfactory louse powder, irrespective of the individual merits of the powder, will achieve the desired effect. Three louse powders were used—namely, MYL, D.D.T., and A.L.63—and each contributed to the successful result.

It is also apparent that a modern army, properly equipped and protected by inoculation, can live in the midst of an epidemic without serious interference with its work.

The importance of the immediate deployment of a combined or closely linked case-finding and case-contact delousing service must never be overlooked; also the quick deployment of a special organization similar to that of the U.S. Typhus Commission, which is essential for the rapid control of an epidemic. It is understood that these aspects of the measures adopted in Naples will shortly be published.

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LONDON DOCTORS AND THE BILL

MASS MEETING AT HEADQUARTERS

The first London mass meeting of practitioners, arranged by the Metropolitan Counties Branch Council of the B.M.A., was held in the Great Hall of B.M.A. House on April 4. Although short notice had been given the hall was crowded to excess, with many sitting on the floor or standing during the two hours of the proceedings. Sir Crisp English was chairman, and Dr. Charles Hill, Secretary of the Association, was the speaker. Dr. Hill followed the same line of argument as in his earlier addresses in various towns, giving first a factual summary of the Bill and then proceeding to points of criticism. A factual summary, he said, was the more necessary because the White Paper, which claimed to be such a summary, was either something more or something less in that there were important proposals in the Bill which it omitted, while it dealt with other subjects which were not in the Bill.

Tersely Put

Instead of attempting to summarize a seventy-minutes address, which was received with enthusiasm and without any sign of dissidence, we give some of Dr. Hill's points.

"Those who maintain that our profession is obstructive and stands in the way of a better health service either do not know the facts or are wilfully misrepresenting them for their own purposes."

"It is wrong to say our opposition is unqualified. The Bill is an amalgam of good and bad. For example, the proposed hospital service is an imaginative scheme which in its regional aspects will meet with the approval of the profession as a whole."

"But it is unnecessary for the Minister to proceed to actual ownership of hospitals. All the power he requires is his by virtue of control of the purse. If a hospital is to hold its rightful place in the community and remain a centre of local pride and affection it should be locally owned and not become a State establishment."

Then the general practitioner service—

"To divide the loyalty of the family doctor between the patient and some superior and appointing body is not in the public interest."

"We must examine the proposals in relation to principles and not to compensation or remuneration."

A Succession of Interrogatives

"Is the ownership of goodwill in practices essential or important in the preservation of the freedom of the individual doctor?"

"Is it right and proper that a man who has satisfied the requirements of the General Medical Council shall be dependent upon the decision of a body appointed by the Minister before he can set up in public service in the area of his choice?"

"Is it possible that in fact practitioners who for one reason or another are unacceptable to the interviewing committees will go from area to area seeking openings and finding none?"

"Might it mean that practitioners may get on to the *Medical Register* and yet be unable to earn a living?"

"Will it impair the chances of women practitioners?"

"Is it conceivable that 66 millions of taxpayers' money is to be paid and that *laisser-faire* methods of distribution will follow? The compensation proposal must be examined with the proposals for the distribution of general practitioners."

"Whatever subtleties may be involved in the compensation-cum-distribution proposals it does not need a leap of the imagination to appreciate that if general practitioners are to be remunerated in substantial part by salary much of the journey to whole-time salaried service has been travelled."

As for health centres—

"There may be marble halls with chromium fittings and platinum blondes, with bigger and better queues, but it is well to be aware of the danger that with medicine so institutionalized the personal touch in family practice may be lost."

"This is not one administration, but three administrations—it is fragmentary, compartmental, splinter administration put forward with the adjective 'comprehensive.'"

"It may be that the Government will not be deterred by any Parliamentary pressure which can be brought to bear. But after we have been sufficiently depressed by contemplating that possibility, let us remember that no Government can bring into being any health service without the co-operation of the profession. (Loud cheers.) That is not a threat. It is my business to state the facts that we must bear in mind."

In conclusion Dr. Hill declared:

"Never before has our profession stood in greater need of leadership and of unity. The leadership the Association will provide, the unity must come from the ranks."

Public Relations

Questions were invited at the close of the address. Many of the questions had to do with public relations, on which Dr. Hill hoped that he would not be pressed too far, but with expert advice a great deal was being done in this field. As an example of what could be done locally he mentioned Stoke-on-Trent, where forty public meetings had been arranged, to be addressed by members of the profession. One member, whose "blood boiled" at the *Punch* cartoon of the doctors in the arena *Morituri te salutant*, urged the use of the services of the cartoonist and poster artist. Criticism was also made of part of a news reel in which, it was said, the doctor's case was misrepresented. Dr. Hill explained that this form of propaganda was invited, but in the result the Association's case was embedded with other matter for which the Association had no responsibility, so that a misleading impression was given. Of the press in general Dr. Hill said that many organs had given the profession's case a very good showing, though there were some lamentable exceptions. "There is a widely read and respected paper in a Northern town which seems consistently determined to see no good in our profession and to criticize it in all circumstances, and there are members of our profession who for political purposes are perfectly willing to belittle it." There was cheering at this remark, and Dr. H. B. Morgan, Labour M.P. for Rochdale and member of the Association Council, who had raised the question, asked that Dr. Hill should make it clear that the last remark did not apply to him. Dr. Hill immediately replied that his remark certainly did not apply to Dr. Morgan, who had consistently given very wise and useful advice to the Council in the presentation of a point of view which he did not wholly share.

Future Action

One member of the audience asked for explicit advice on what to do in the event of the proposals not being modified. "I want," said Dr. Hill, "to give a plain answer. I do not think the profession at this moment is in a position to exercise a fair judgment which would bind it as to what it would do